

39. The modified protein allergen of claim 37 wherein the at least one IgE epitope is one that is recognized when the unmodified protein allergen is contacted with a pool of sera IgE taken from a group of at least two individuals that are allergic to the unmodified protein allergen.

40. The modified protein allergen of claim 37 wherein at least one modified amino acid is located in the center of the at least one IgE epitope.

41. The modified protein allergen of claim 37 wherein at least one amino acid in the at least one IgE epitope of the unmodified protein allergen has been modified by substitution.

D1
cancel
42. The modified protein allergen of claim 41 wherein at least one hydrophobic amino acid in the at least one IgE epitope of the unmodified protein allergen has been substituted by a neutral or hydrophilic amino acid.

D2
46. The modified protein allergen of claim 37 wherein the modified protein allergen is a portion of the unmodified protein allergen.

47. A composition comprising the modified protein allergen of claim 37 and an adjuvant selected from the group consisting of IL-12, IL-16, IL-18, IFN γ , and immune stimulatory sequences.

D3
51. The modified protein allergen of claim 37 wherein the unmodified protein allergen is obtained from a source selected from the group consisting of legumes, milks, grains, eggs, fish, crustaceans, mollusks, insects, molds, dust, grasses, trees, weeds, mammals, and natural latexes.

D4
53. The modified protein allergen of claim 37 made by the process of:
identifying at least one IgE epitope in an unmodified protein allergen;

preparing at least one modified protein allergen whose amino acid sequence is substantially identical to that of the unmodified protein allergen except, that at least one amino acid has been modified in the at least one IgE epitope;

screening for IgE binding to the at least one modified protein allergens by contacting the at least one modified protein allergens with serum IgE taken from at least one individual that is allergic to the unmodified protein allergen; and

selecting a modified protein allergen with decreased binding to IgE as compared to the unmodified protein allergen.

Please add new claims 60-71:

60. A modified food allergen whose amino acid sequence is substantially identical to that of an unmodified food allergen except that at least one amino acid has been modified in at least one IgE epitope so that IgE binding to the modified food allergen is reduced as compared with IgE binding to the unmodified food allergen, the at least one IgE epitope being one that is recognized when the unmodified food allergen is contacted with serum IgE from an individual that is allergic to the unmodified food allergen.

61. The modified protein allergen of claim 60 wherein the unmodified food allergen is obtained from a source selected from the group consisting of legumes, milks, grains, eggs, fish, crustaceans, and mollusks.

62. The modified protein allergen of claim 61 wherein the unmodified food allergen is obtained from a source selected from the group consisting of wheat, barley, cow milk, egg, codfish, hazel nut, soybean, and shrimp.

63. A modified peanut allergen whose amino acid sequence is substantially identical to that of an unmodified peanut allergen except that at least one amino acid has been modified in at least one IgE epitope so that IgE binding to the modified peanut allergen is reduced as

compared with IgE binding to the unmodified food allergen, the at least one IgE epitope being one that is recognized when the unmodified peanut allergen is contacted with serum IgE from an individual that is allergic to the unmodified peanut allergen.

64. The modified peanut allergen of claim 63 wherein the unmodified peanut allergen is selected from the group consisting of Ara h 1, Ara h 2, and Ara h 3.
65. The modified allergen of claim 37, claim 60, or claim 63, wherein the at least one IgE epitope contains 1-6 amino acid residues that are modified as compared with the unmodified allergen.
66. The modified allergen of claim 37, claim 60, or claim 63, wherein the at least one IgE epitope contains 1-5 amino acid residues that are modified as compared with the unmodified allergen.
67. The modified allergen of claim 37, claim 60, or claim 63, wherein the at least one IgE epitope contains 1-4 amino acid residues that are modified as compared with the unmodified allergen.
68. The modified allergen of claim 37, claim 60, or claim 63, wherein the at least one IgE epitope contains 1-3 amino acid residues that are modified as compared with the unmodified allergen.
69. The modified allergen of claim 37, claim 60, or claim 63, wherein the at least one IgE epitope contains 1-2 amino acid residues that are modified as compared with the unmodified allergen.